

January 22, 2004

Barry S. Drucker
Minerals Management Service
381 Elden Street, MS 4030
Herndon, VA 20170-4817

Dear Mr. Drucker:

This letter is the twelfth Bi-Monthly Status Letter for Cooperative Agreement Number 1435-01-02-CA-85050, *Field Testing of a Physical/Biological Monitoring Methodology for Offshore Dredging and Mining Operations*.

Task 1: Biology: Bob Diaz is away from campus as this report was being prepared and thus does not have a specific report. It is my understanding that his work progresses as has been forecast in earlier reports and that there have been no specific problems nor any unusual findings.

Task 2: Shoreline and Beach Studies: Scott Hardaway and Donna Milligan report that the Pug, the shoreline survey vehicle, should be back in service by mid-February allowing us to resume the monthly surveys. We are evaluating the shore morphology from Cape Henry to False Cape using orthorectified, historical, aerial photography and shoreline change analysis. Analysis of profile data from the 1980s and 1990s is continuing. This week we will fly the shoreline to obtain oblique and vertical aerial photography. The oblique imagery will be qualitatively compared with the oblique aeriels taken immediately after Hurricane Isabel to assess the recovery of the beach.

Task 3: Bottom Imagery and Bathymetry: Jesse McNinch and Grace Browder state that analysis of the seismic and sidescan sonar data continues. There appears to be a correlation between the location of transverse bars in the nearshore and the presence of large (> 800 meters in cross-section) relict channels. This trend is repeated at sites in North Carolina as well. It is not clear yet whether the depth of the channels is a factor. Also strongly linked to the bar locations are the outcropping gravel patches, a finding which corroborates earlier studies. Planned statistical analyses will quantify these results.

Task 4: Wave Studies: Jerome Maa submitted the following status report.

We have improved the efficiency (about 20 times faster) of processing radar raw data for

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generating the radar images. We are not 100 percent satisfied with the improvement, but it is good enough for our purposes. We might have minor improvements at a later stage.

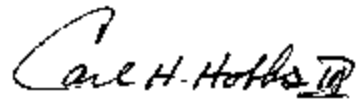
Currently, we are working on data processing and analysis despite that circumstance that we do not yet have any real data. We are working with the artificial data set. Now we can generate any wave line spectrum and use the spectrum to generate wave time series. Then we can use the generated time series to calculate the spectrum and check it against the one we used at the beginning. We have successfully completed all the details in this process. Now we are moving into directional wave spectrum. It is a much more complicated case for directional spectrum, but we plan to finish this task within another month or two.

We also requested help from the Virginia Beach city government to install the Furuno 8251 marine radar on top of a hotel roof next to the beach. We plan to go there in February to acquire real wave data for analysis.

Task 5: Project Management. I am pleased to report that the project continues to progress smoothly. You will recall that Task 2 is commingled with another MMS funded cooperative project, Cooperative Agreement Number 1435-01-98-CA-30934, as variously modified, titled *Continuing Studies of Southeastern Virginia's Inner Continental Shelf*. I recently submitted short reports to Roger Amato, the MMS Contracting Officer's Technical Representative, that discuss some elements common to both projects.

As always, should you have any question, please do not hesitate to contact any of us.

Respectfully submitted,

A handwritten signature in black ink, reading "Carl H. Hobbs, III". The signature is written in a cursive, flowing style with a large initial "C".

Carl H. Hobbs, III
Associate Professor and Project Manager

Copy: MMS: J. Kendall, W. Adcox, J. Rowland, R. Amato
VIMS: R. Diaz, J. McNinch, G. Browder, S. Hardaway, D. Milligan, J. Maa, C. Harris, M. Fonner